

REMARKS

This paper is being provided in response to the Final Office Action dated October 13, 2006 for the above-referenced application.

The rejection of Claims 9-10, 16-17, 26-27 and 33-34 under 35 U.S.C. 103(a) as being unpatentable over Deng, et al.: "Scheduling Real-Time Applications in an Open Environment" (hereinafter "Deng") is hereby traversed and reconsideration thereof is respectfully requested.

Claim 9 recites a method of scheduling tasks in a multitasking operating system. The method includes using a first scheduler to schedule tasks, choosing a second scheduler from a plurality of schedulers, where at least one of the plurality of schedulers selects processes to be run from a plurality of runnable processes different from the plurality of schedulers and where choosing the second scheduler is based on parameters that vary according to run time conditions. The method also recites switching, during run time, from using the first scheduler to schedule tasks to using the second scheduler to schedule tasks. Claims 10, 16, and 17 depend from claim 9.

Claim 26 recites computer software in combination with a computer readable medium that schedules tasks in a multitasking operating system. The software is recited as including executable code, provided on a computer readable medium, that uses a first scheduler to schedule tasks, executable code, provided on a computer readable medium, that chooses a second scheduler from a plurality of schedulers, where at least one of the plurality of

schedulers selects processes to be run from a plurality of runnable processes different from the plurality of schedulers and where executable code that chooses the second scheduler uses parameters that vary according to run time conditions. The software is recited as also including executable code, provided on a computer readable medium, that switches, during run time, from using the first scheduler to schedule tasks to using the second scheduler to schedule tasks. Claims 27, 33, and 34 depend from claim 26.

Deng discloses a system whereby an application developer develops a real-time application, A_k , and then assigns a scheduling algorithm, \sum_k , to schedule jobs for A_k (see page 309, second column of Deng). As shown in Figure 1 and described in the corresponding text, a single OS Scheduler (EDF) manages the various scheduling algorithms. As indicated at the bottom of column 2 on page 310, when a job of a real-time application A_k is released, the OS scheduler invokes the server scheduler of the server S_k to insert the newly released job in the proper location in the server's ready queue according to the scheduling algorithm \sum_k .

Applicants respectfully submit that Deng does not show, teach, or suggest features recited in independent claims 9 and 26 including choosing a second scheduler from a plurality of schedulers and switching, during run time, from using a first scheduler to schedule tasks to using the second scheduler to schedule tasks. Instead, Deng discloses using a single *scheduler* with a plurality of different scheduling *algorithms*. Applicants respectfully submit that this is very different from the recited feature of switching from a first scheduler to a second scheduler during run time. Using a single scheduler as disclosed by

Deng requires, at a minimum, that the processor expend cycles having the single scheduler coordinate and arbitrate between the various scheduling algorithms. Such a disadvantage is not present with the claimed invention, since the entire scheduler is replaced with a different scheduler. Accordingly, Applicants respectfully request that this rejection be reconsidered and withdrawn.

The rejection of Claims 1-8, 11-14, 18-20, 22-25, and 28-31 under 35 U.S.C. 103(a) as being unpatentable over Deng and further in view of U.S. Patent No. 5,630,130 to Perotto (hereinafter "Perotto") is hereby traversed and reconsideration thereof is respectfully requested in view of amendments to the claims contained herein.

Claim 1 recites a method of switching during run time from a first scheduler to a second scheduler for a multitasking system for a processor. The method is recited as including choosing the second scheduler from a plurality of schedulers, where at least one of the plurality of schedulers selects processes to be run from a plurality of runnable processes different from the plurality of schedulers and where choosing the second scheduler is based on parameters that vary according to run time conditions. The method is also recited as including setting, during a context switch operation, a program counter to an address corresponding to code of the second scheduler and the processor executing code of the second scheduler at an address corresponding to the program counter. Claims 2, 3, and 5-8 depend from claim 1.

Claims 11-14 depend from claim 9, discussed above.

Claim 18 recites computer software in combination with a computer readable medium that switches, during run time, from a first scheduler to a second scheduler for a multitasking system for a processor. The software is recited as including executable code, provided on a computer readable medium, that chooses the second scheduler from a plurality of schedulers, where at least one of the plurality of schedulers selects processes to be run from a plurality of runnable processes different from the plurality of schedulers and where executable code that chooses the second scheduler uses parameters that vary according to run time conditions. The software is also recited as including executable code, provided on a computer readable medium, that sets a program counter to an address corresponding to code of the second scheduler and executable code, provided on a computer readable medium, that causes the processor to execute code at an address corresponding to the program counter. Claims 19, 20, and 22-25 depend from claim 18.

Claims 28-31 depend from claim 26, discussed above.

Deng is discussed above.

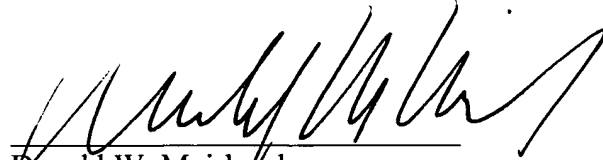
Perotto discloses a multitasking controller having task storage means (2) for storing up to N tasks (P0,P1,P2,P3) where each task comprises a sequence of instructions. The controller also includes a microprocessor for processing, by time-sharing, a plurality of such N tasks, and a random access memory (12) for storing variable data created and used by said microprocessor. The microprocessor further includes a scheduler (7) realized in hardware for

controlling the use of the microprocessor or by such processes, and program counter storage means for storing N program counters (Pc0,Pc1,Pc2,Pc3) each for use by the scheduler (7), which is able select a different one of the program counters (Pc0,Pc1,Pc2,Pc3) when the task processed by the microprocessor is changed without the transfer of data from the random access memory (12).

Applicants respectfully submit that, the deficiencies of Deng with respect to independent claims 9, and 26 (and, by similar reasoning, claims 1 and 18) are not overcome by the addition of Perotto, especially since, like Deng, Perotto discloses a *single* scheduler. In Perotto, the singel scheduler schedules one of the four disclosed tasks (P0, P1, P2, P3). None of the tasks P0, P1, P2, or P3 of Perotto are themselves schedulers and all of Applicants' independent claims specifically recite in some form that the schedulers are different from the tasks scheduled by the schedulers. Accordingly, Applicants respectfully request that this rejection be reconsidered and withdrawn.

Based on the above, Applicants respectfully request that the Examiner reconsider and withdraw all outstanding rejections and objections. Favorable consideration and allowance are earnestly solicited. Should there be any questions after reviewing this paper, the Examiner is invited to contact the undersigned at 508-898-8603.

Respectfully submitted,
MUIRHEAD AND SATURNELLI, LLC

A handwritten signature in black ink, appearing to read 'Donald W. Muirhead', written over a horizontal line.

Donald W. Muirhead
Reg. No. 33,978

Date: December 22, 2006

Muirhead and Saturnelli, LLC
200 Friberg Parkway, Suite 1001
Westborough, MA 01581
508-898-8601 (main)
508-898-8602 (fax)